Title: CROSS-POLLINATION OF MULTIPLE SYNC SOURCES
Inventors: Jason Evan Schleifer et al.
Filed: February 4, 2004
Application No.: 10/771,896   Docket No.: 50037.206US01

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Fig.1

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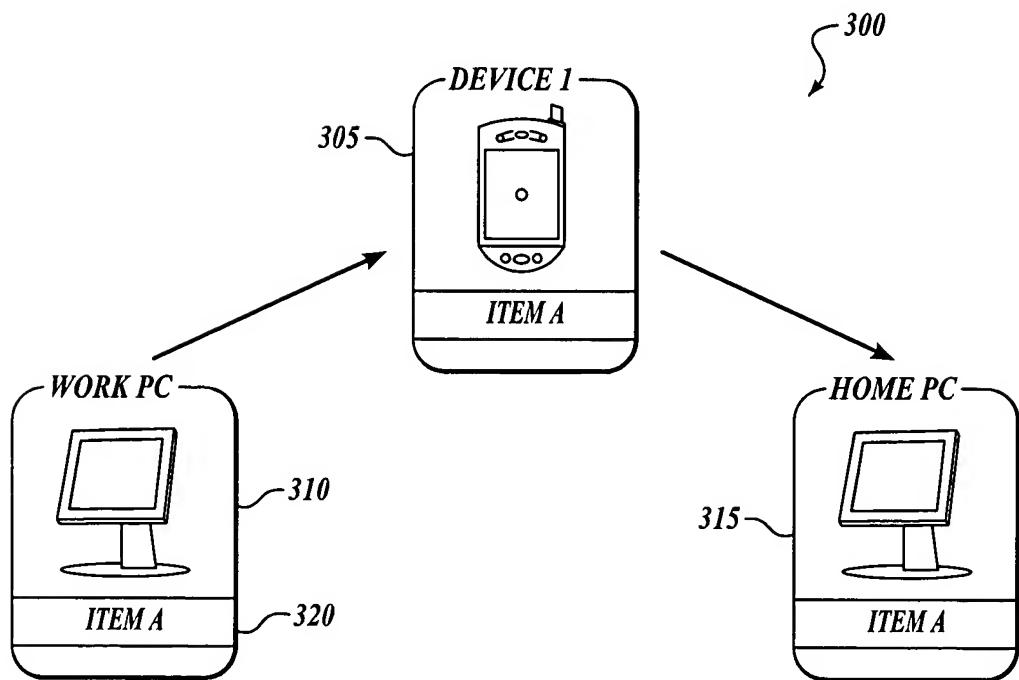
Fig.3

*1. SYNC ONE DATA SOURCE*   **4/15**

Fig.4

WORK PC | CONTACTS IN OUTLOOK | 305 | CONTACTS ON DEVICE

310 | ITEM A | | ITEM A
| | SYNC | ITEM ?
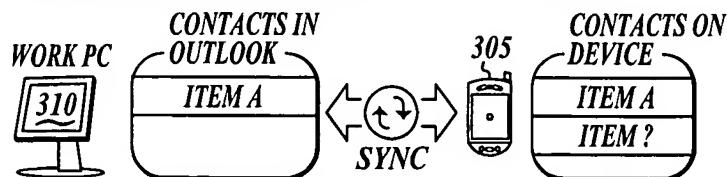
2. ADD SECOND DATA SOURCE. USER CHOOSES TO CROSS-POLLINATE AT DATA SOURCE CREATION TIME
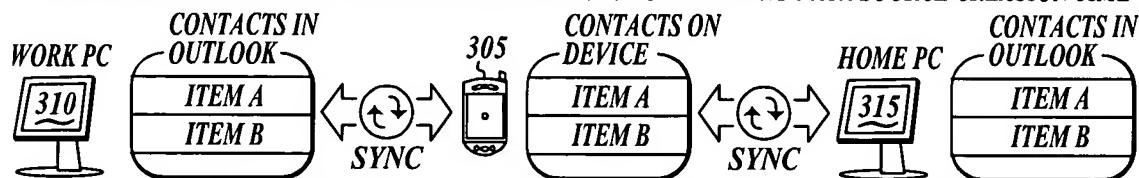
WORK PC | CONTACTS IN OUTLOOK | 305 | CONTACTS ON DEVICE | HOME PC | CONTACTS IN OUTLOOK

310 | ITEM A | | ITEM A | 315 | ITEM A
| ITEM B | SYNC | ITEM B | SYNC | ITEM B

3. CHANGE ACTIVESYNC SETTINGS: ITEMS CREATED ON DEVICE SYNC TO WORK PC ITEMS FROM WORK PC & HOME PC DO NOT CROSS-POLLINATE

WORK PC | CONTACTS IN OUTLOOK | 305 | CONTACTS ON DEVICE | HOME PC | CONTACTS IN OUTLOOK

310 | ITEM A | | ITEM A | 315 | ITEM A
| ITEM B | | ITEM B | | ITEM B
| ITEM C | SYNC | ITEM C | SYNC |
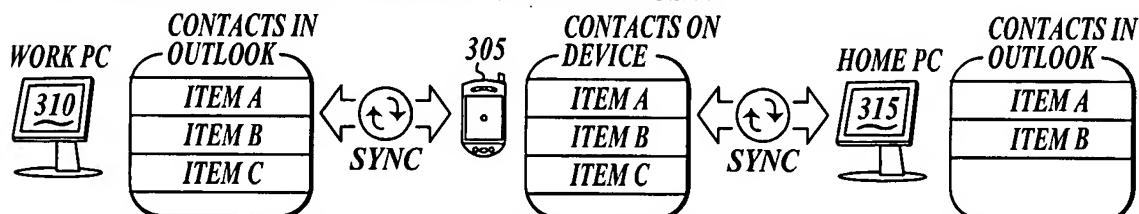
*4. CHANGE ACTIVESYNC SETTINGS: ITEMS CREATED ON DEVICE SYNC TO WORK PC ITEMS FROM WORK PC & HOME PC DO NOT CROSS-POLLINATE. CREATE ITEM ON THE HOME PC*

WORK PC | CONTACTS IN OUTLOOK | 305 | CONTACTS ON DEVICE | HOME PC | CONTACTS IN OUTLOOK

310 | ITEM A | | ITEM A | 315 | ITEM A
| ITEM B | | ITEM B | | ITEM B
| ITEM C | SYNC | ITEM C | SYNC | ITEM D
| | | ITEM D | |
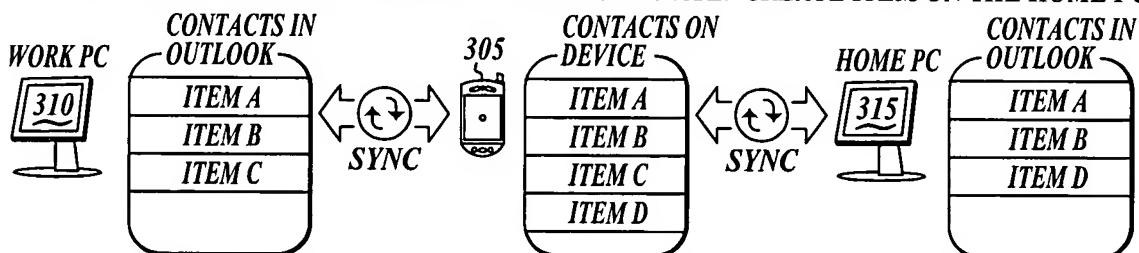
5. CHANGE ACTIVESYNC SETTINGS ITEMS CREATED ON DEVICE SYNC TO WORK PC & HOME PC. ITEMS CROSS-POLLINATE WHEN CREATED ON HOME OR WORK PCS CREATE ITEM ON THE WORK PC

WORK PC | CONTACTS IN OUTLOOK | 305 | CONTACTS ON DEVICE | HOME PC | CONTACTS IN OUTLOOK

310 | ITEM A | | ITEM A | 315 | ITEM A
| ITEM B | | ITEM B | | ITEM B
| ITEM C | SYNC | ITEM C | SYNC | ITEM D
| ITEM E | | ITEM D | | ITEM E
| | | ITEM E | |
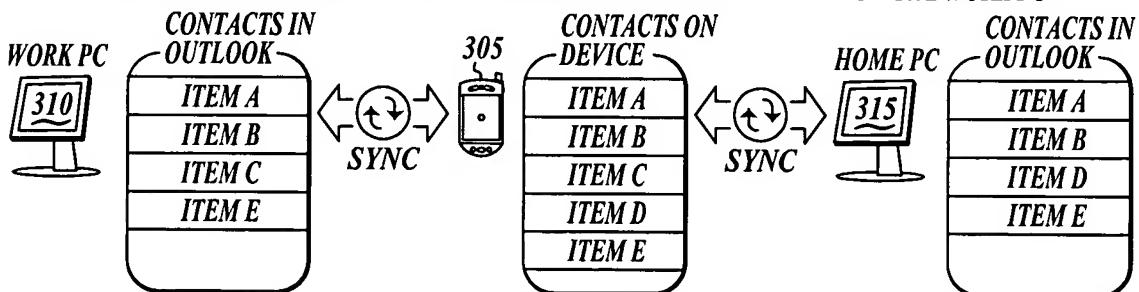
6. DELETE HOME PC DATA SOURCE (NOTE ITEM D IS REMOVED FROM THE DEVICE)
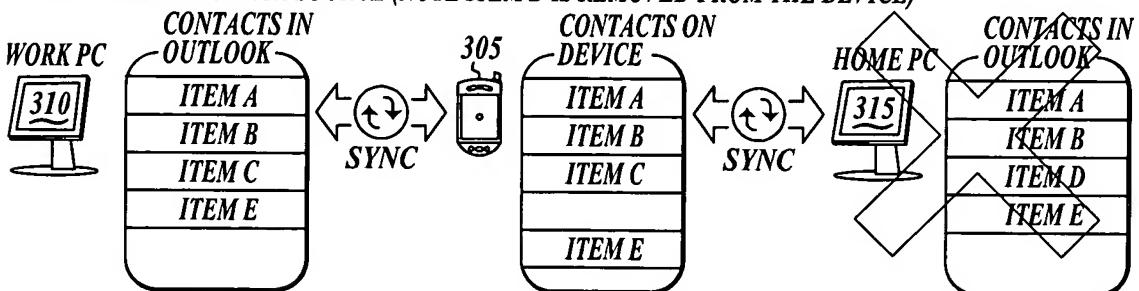
WORK PC | CONTACTS IN OUTLOOK | 305 | CONTACTS ON DEVICE | HOME PC | CONTACTS IN OUTLOOK

310 | ITEM A | | ITEM A | 315 | ITEM A
| ITEM B | | ITEM B | | ITEM B
| ITEM C | SYNC | ITEM C | SYNC | ITEM D
| ITEM E | | | | ITEM E
| | | ITEM E | |

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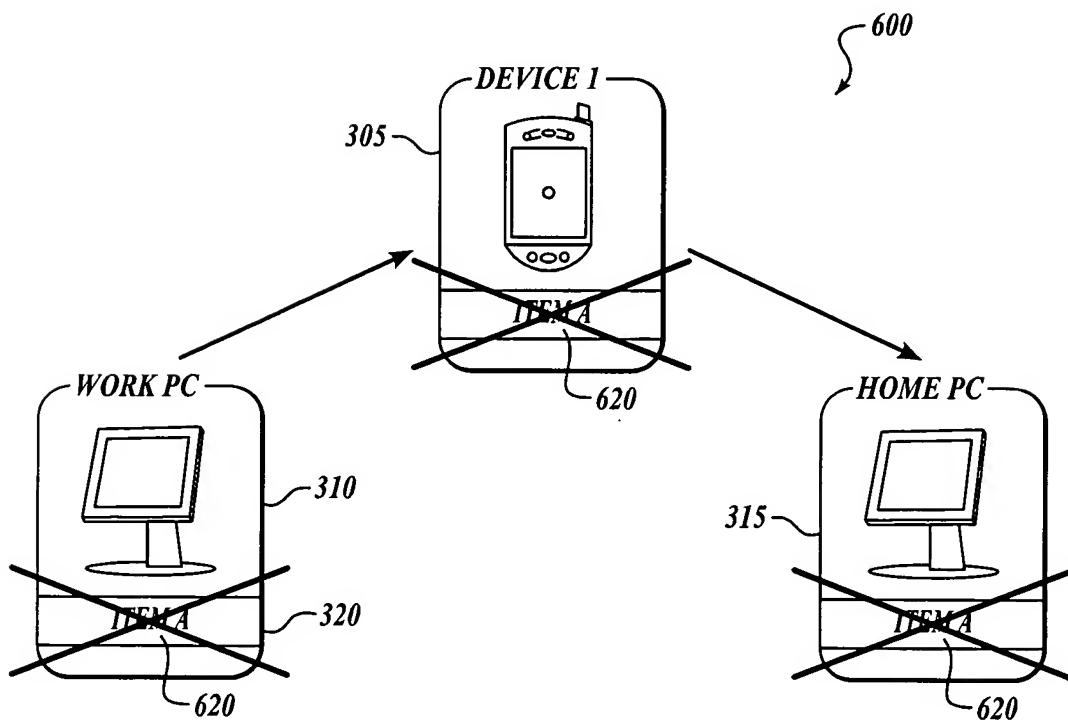
Fig. 6

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1. ITEM A HAS ALREADY SYNCED TO THE DEVICE FROM SERVER1

SERVER1 — 810

ITEM	ServerID	SyncHash
A	SID1	HASH101

DEVICE

ITEM	Server1-ID	SyncHash
A	SID1	HASH101	815
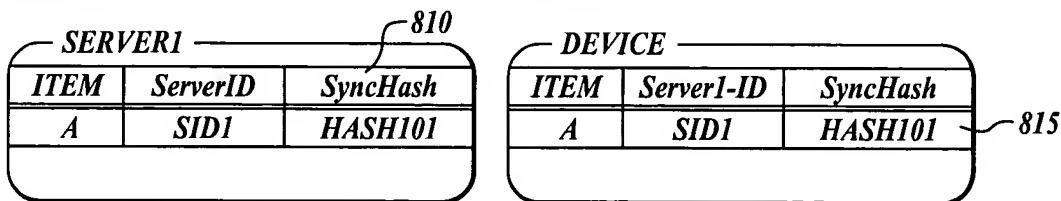
2. USER COPIES ITEM A, CREATING ITEM B WITH AN IDENTICAL SYNCHASH

SERVER1

ITEM	ServerID	SyncHash
A	SID1	HASH101
B	SID2	HASH101

DEVICE

ITEM	Server1-ID	SyncHash
A	SID1	HASH101
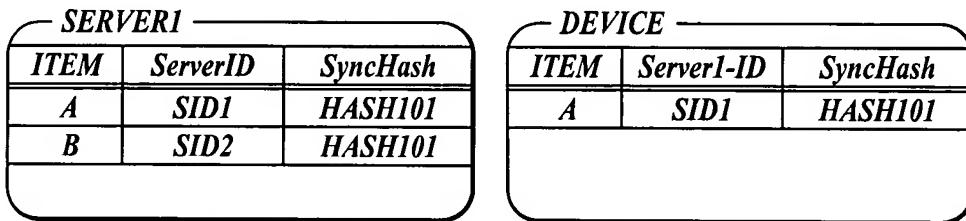
3. SYCN THE SERVER WITH THE DEVICE. ITEM B NOW SYNCS DOWN TO THE DEVICE. ALTHOUGH THE SYNCHASH MATCHES AN ITEM ON THE DEVICE, THE ITEM IT MATCHES IS ALREADY SYNCHING WITH THE SERVER, SO A NEW ITEM IS CREATED.

SERVER1

ITEM	ServerID	SyncHash
A	SID1	HASH101
B	SID2	HASH101

DEVICE

ITEM	Server1-ID	SyncHash
A	SID1	HASH101
B	SID2	HASH101

Fig.8

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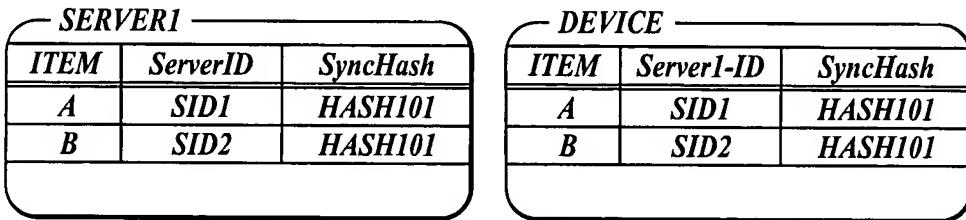
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1. V1 PROTOCOL SUPPORTS PROPERTIES A &B. V3 PROTOCOL SUPPORTS A, B &Z.

V1 SERVER	DEVICE	V3 SERVER
A = Val1		A = Val1
B = Val2		B = Val2
		Z = Val6
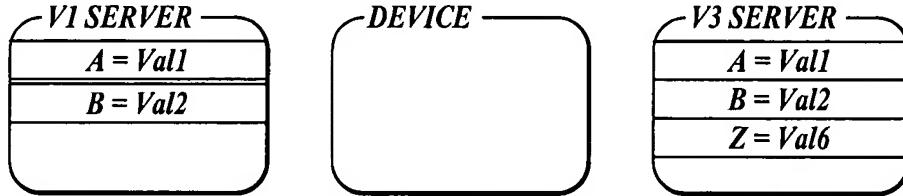
2. FIRST SYNC WITH V1 SERVER PROPERTIES A & B

| V1 SERVER	DEVICE	V3 SERVER
A = Val1	A = Val1	A = Val1
B = Val2	B = Val2	B = Val2
		Z = Val3
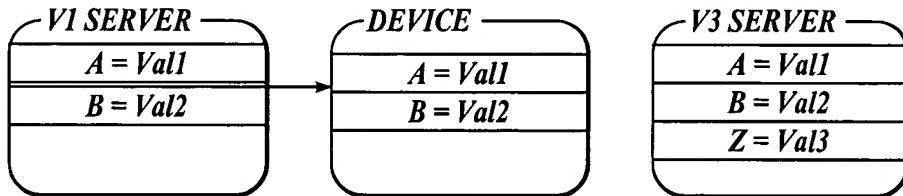
3. SYNC WITH V3 SERVER. ITEM DETECTED AS A DUPLICATE AFTER COMPARING PROPERTIES A & B. SYNC DOWN PROPERTIES A, B,Z.

V1 SERVER	DEVICE	V3 SERVER
A = Val1	A = Val1	A = Val1
B = Val2	B = Val2	B = Val2
	Z = Val3	Z = Val3
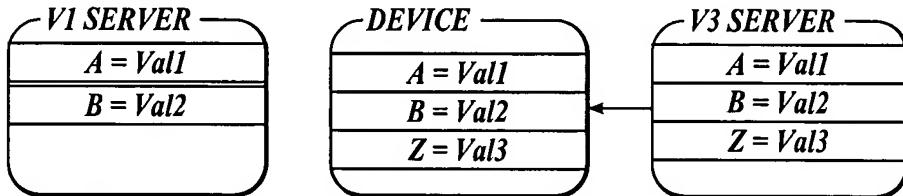
4. SQL-CE CHANGE TRACKING ON DEVICE RECORDS A CHANGE ONLY TO PROPERTY Z. WHEN DEVICE NEXT SYNCS WITH V1 IT NOTES A CHANGE TO THE ITEM, BUT NOT IN ANY PROPERTIES IT SYNCS (ONLY Z HAS CHANGED). NO ADDITIONAL SYNC OCCURS.
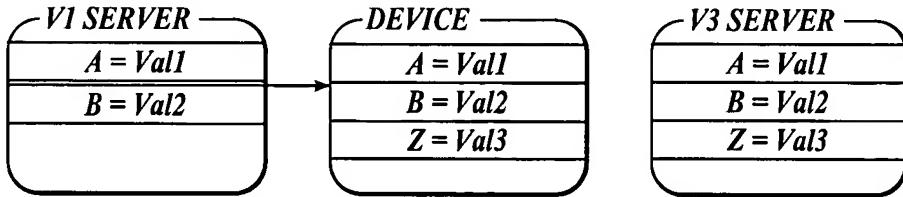
| V1 SERVER	DEVICE	V3 SERVER
A = Val1	A = Val1	A = Val1
B = Val2	B = Val2	B = Val2
	Z = Val3	Z = Val3

Fig.10

1. ITEM A HAS PREVIOUSLY CROSS-POLLINATED TO HOME PC & WORK SERVER

1110

HOME PC	DEVICE	WORK SERVER
ITEM A - v1	ITEM A - HOME PC	WORK SERVER	ITEM A - v1
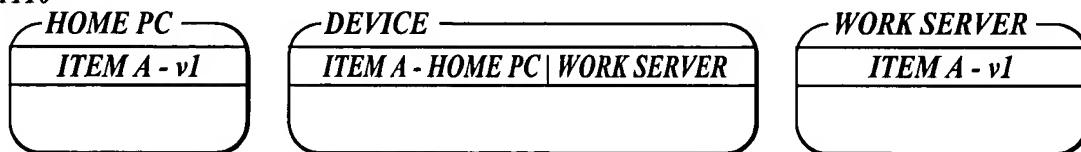
2. EDIT TIME ON WORK SERVER

1120

HOME PC	DEVICE	WORK SERVER
ITEM A - v1	ITEM A - HOME PC	WORK SERVER	ITEM A - v2

3. SYNC WITH WORK SERVER

1130

HOME PC	DEVICE	WORK SERVER
ITEM A - v1	ITEM A - v2 / HOME PC	WORK SERVER	ITEM A - v2
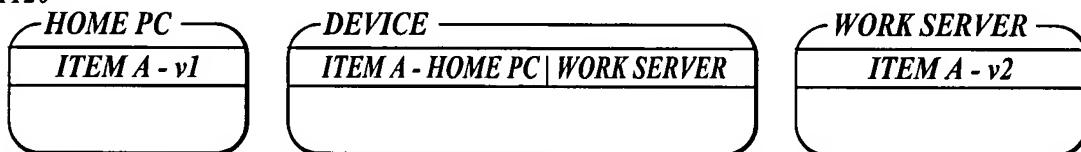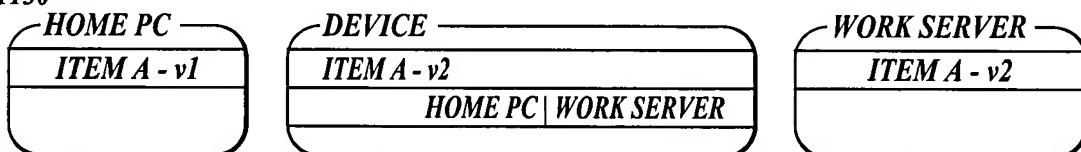
4. SYNC WITH HOME PC. DEVICE SET TO SERVER WINS. ITEM v1 NOW ON DEVICE.

1140

HOME PC	DEVICE	WORK SERVER
ITEM A - v1	ITEM A - v1 / HOME PC	WORK SERVER	ITEM A - v2
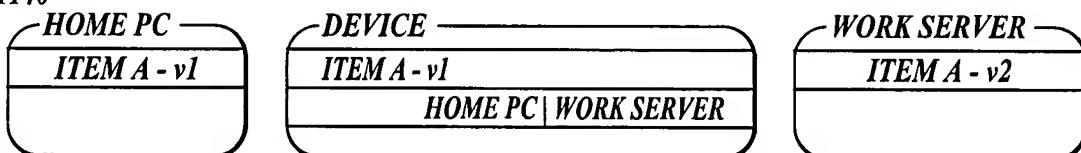
5. SYNC WITH WORK SERVER. [NO CONFLICT] ITEM v1 NOW ON WORK SERVER AS WELL.

1150
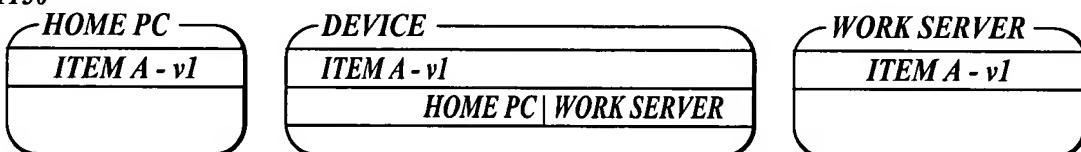
HOME PC	DEVICE	WORK SERVER
ITEM A - v1	ITEM A - v1 / HOME PC	WORK SERVER	ITEM A - v1

Fig.11

1. ITEM A HAS PREVIOUSLY CROSS-POLLINATED TO HOME PC & WORK SERVER

1210

HOME PC	DEVICE	WORK SERVER
ITEM A	ITEM A - HOME PC | WORK SERVER	ITEM A
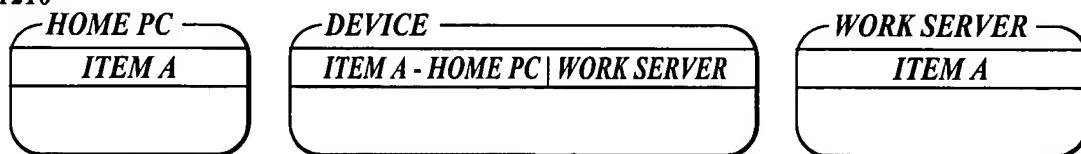
2. SYNC KEY 0 AT WORK SERVER

1220

HOME PC	DEVICE	WORK SERVER
ITEM A	ITEM A - HOME PC | WORK SERVER	ITEM A
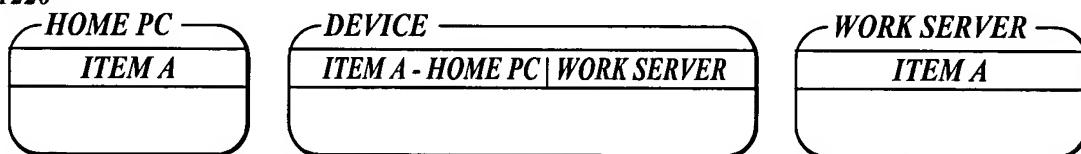
3. DELETE SERVERIDS FOR WORK SERVER

1230

HOME PC	DEVICE	WORK SERVER
ITEM A	ITEM A - HOME PC |	ITEM A

1224
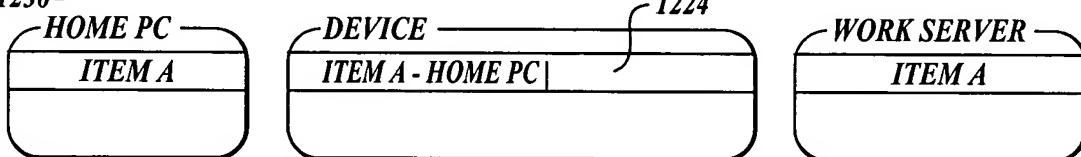
**4. SYNC DOWN ITEM A FROM WORK SERVER AS AN ADD. ITEM IS DETECTED AS DUPLICATE. HOME PC VERSION IS KEPT.**

1240

HOME PC	DEVICE	WORK SERVER
ITEM A	ITEM A - HOME PC | WORK SERVER	ITEM A
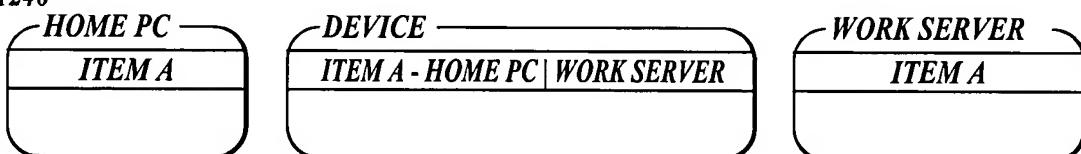
Fig.12

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Fig.15